

T_i = USER
DATA

110

W_i = ENCODED
DATA,
CODE WORD

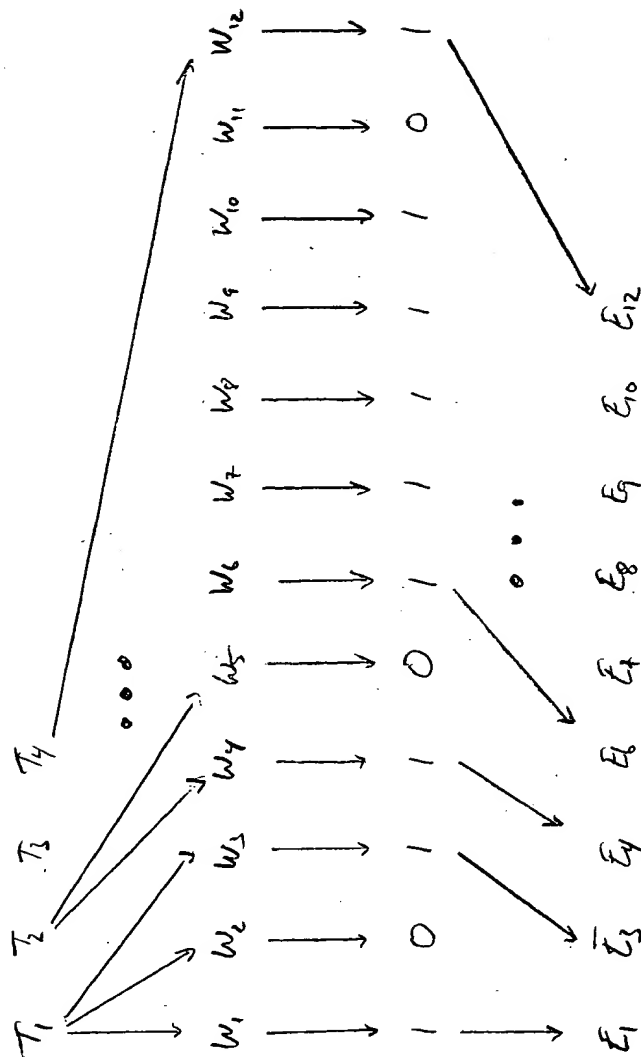
120

P_i = PUNCTURE
MASK

130

E_i = DATA
TRANSMITTED

140



PRIOR ART

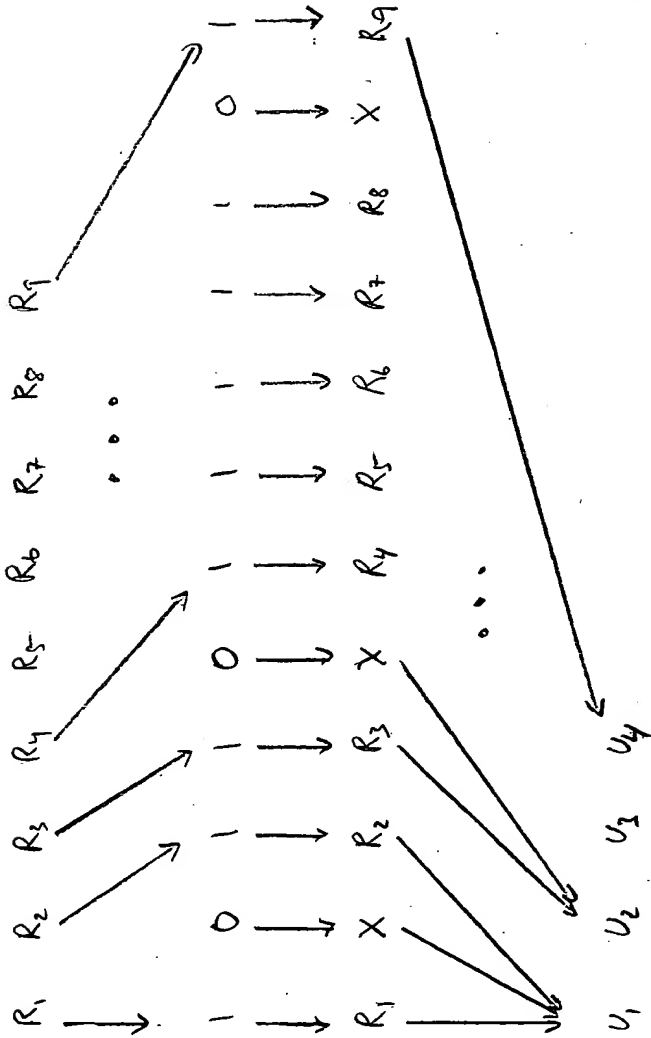
Fig. 1.

R_i = RECEIVED
DATA
210

P_i = PUNCTURE
MASK
220

S_i = RECEIVED
ENCODED
DATA
230

U_i = RECEIVED
USER
DATA
240



PRIOR ART

Fig. 2

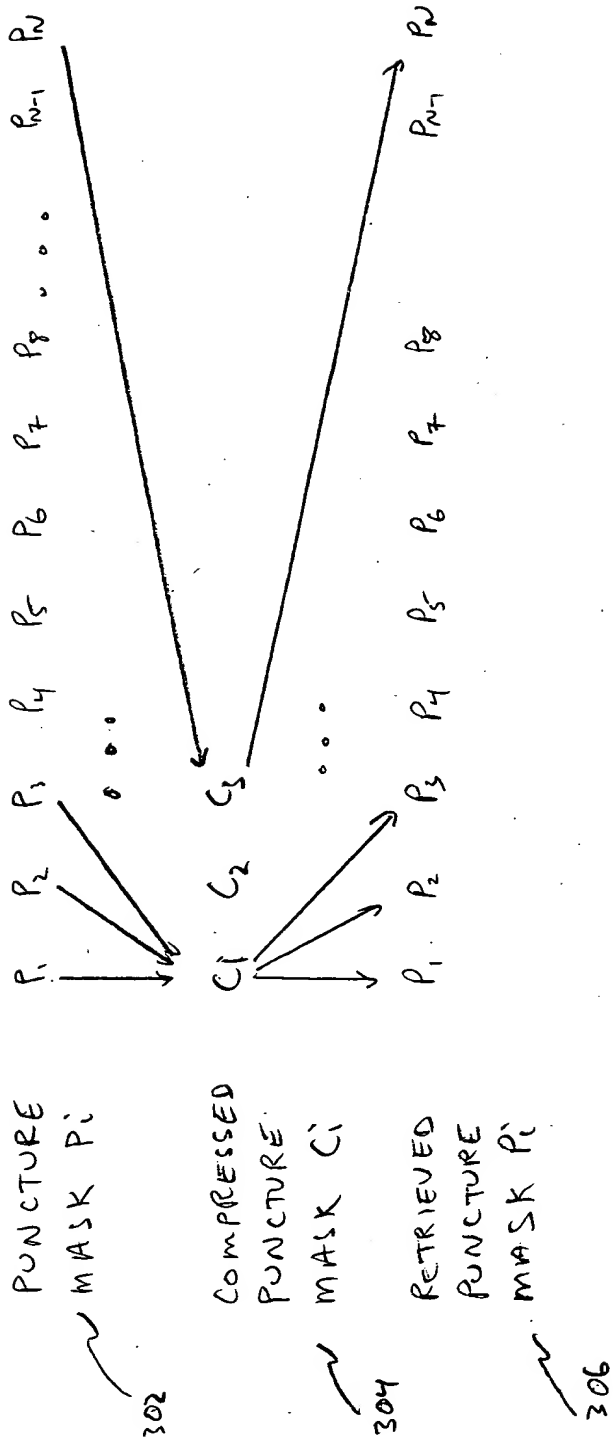


Fig 3.

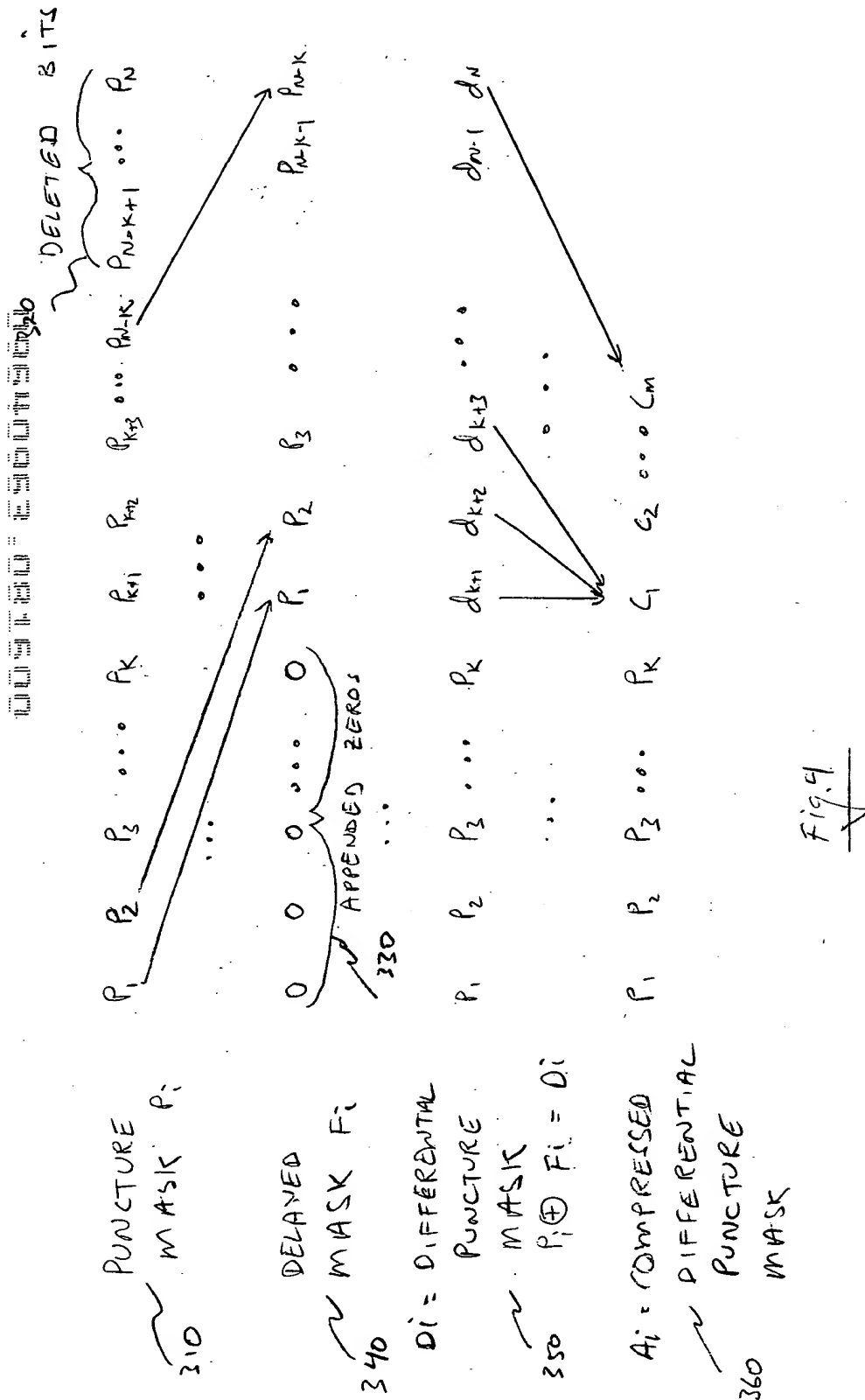


Fig. 4

DATA = 5500000000

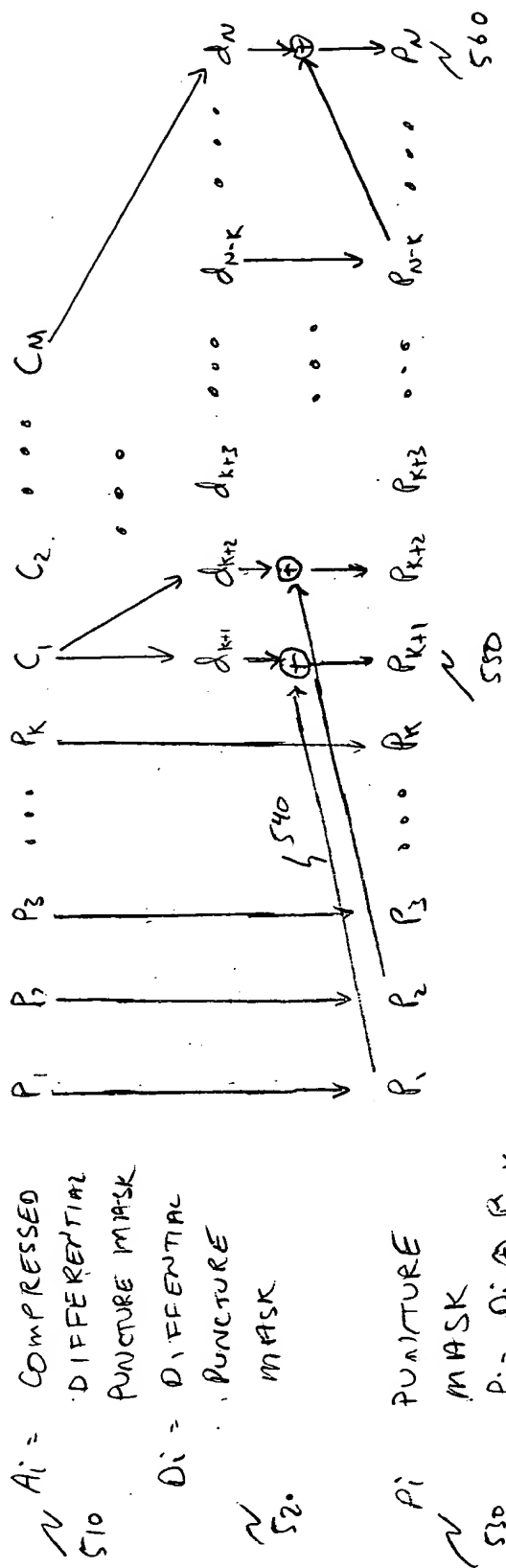


Fig. 6

A_i = COMPRESSED
DIFFERENTIAL
PUNCTURE MASK
610

D_i = DIFFERENTIAL
PUNCTURE MASK
640

FIRST K BITS READ
SHIFT BIT BY $3=K$
XOR ($d_i \oplus d_{i-3}$)
SHIFT BIT BY $3=K$
XOR ($d_i \oplus d_{i-3}$)

SHIFT BIT BY $3=K$
XOR ($d_i - d_{i-3}$)

P_i PUNCTURE
MASK
650

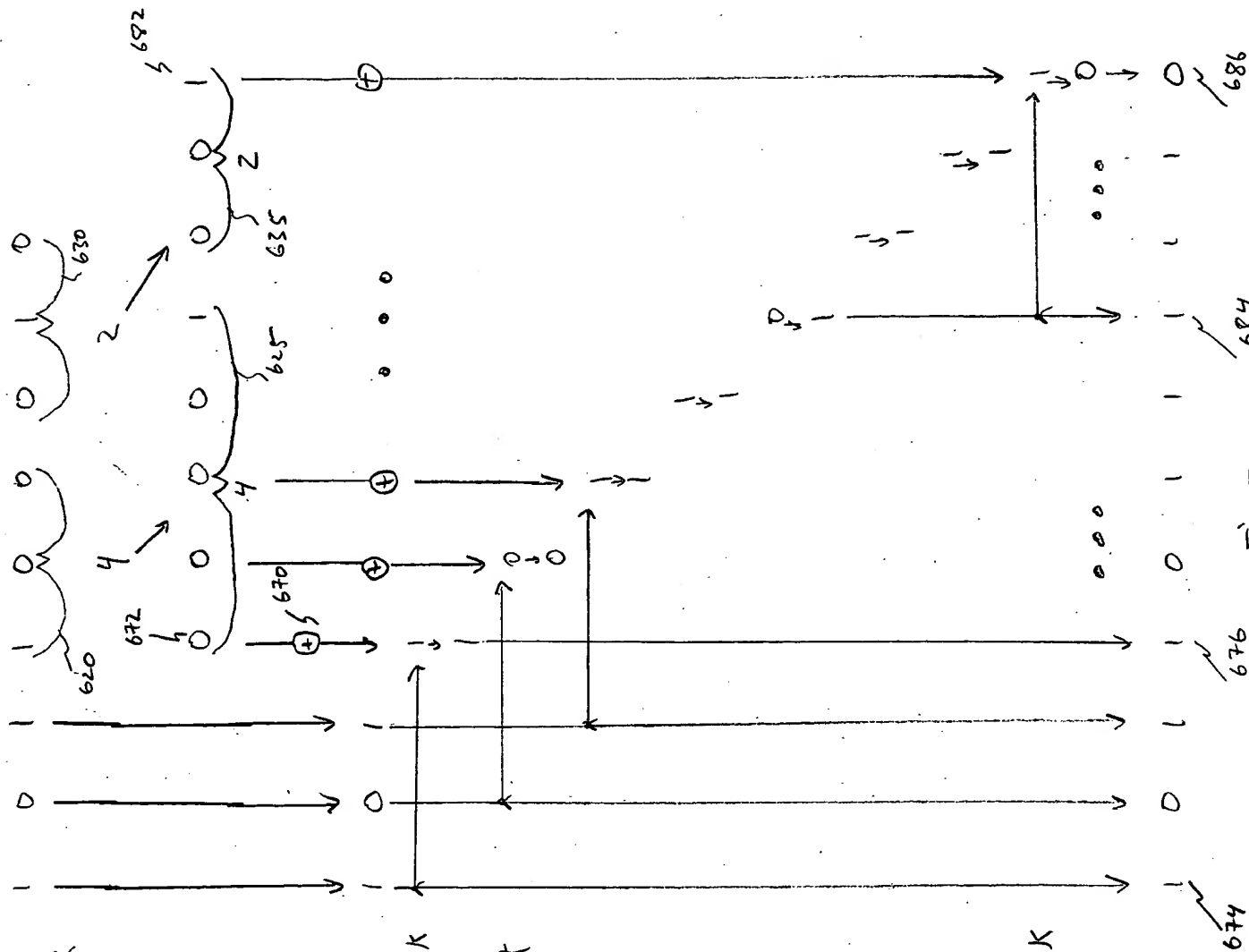


Fig. 7

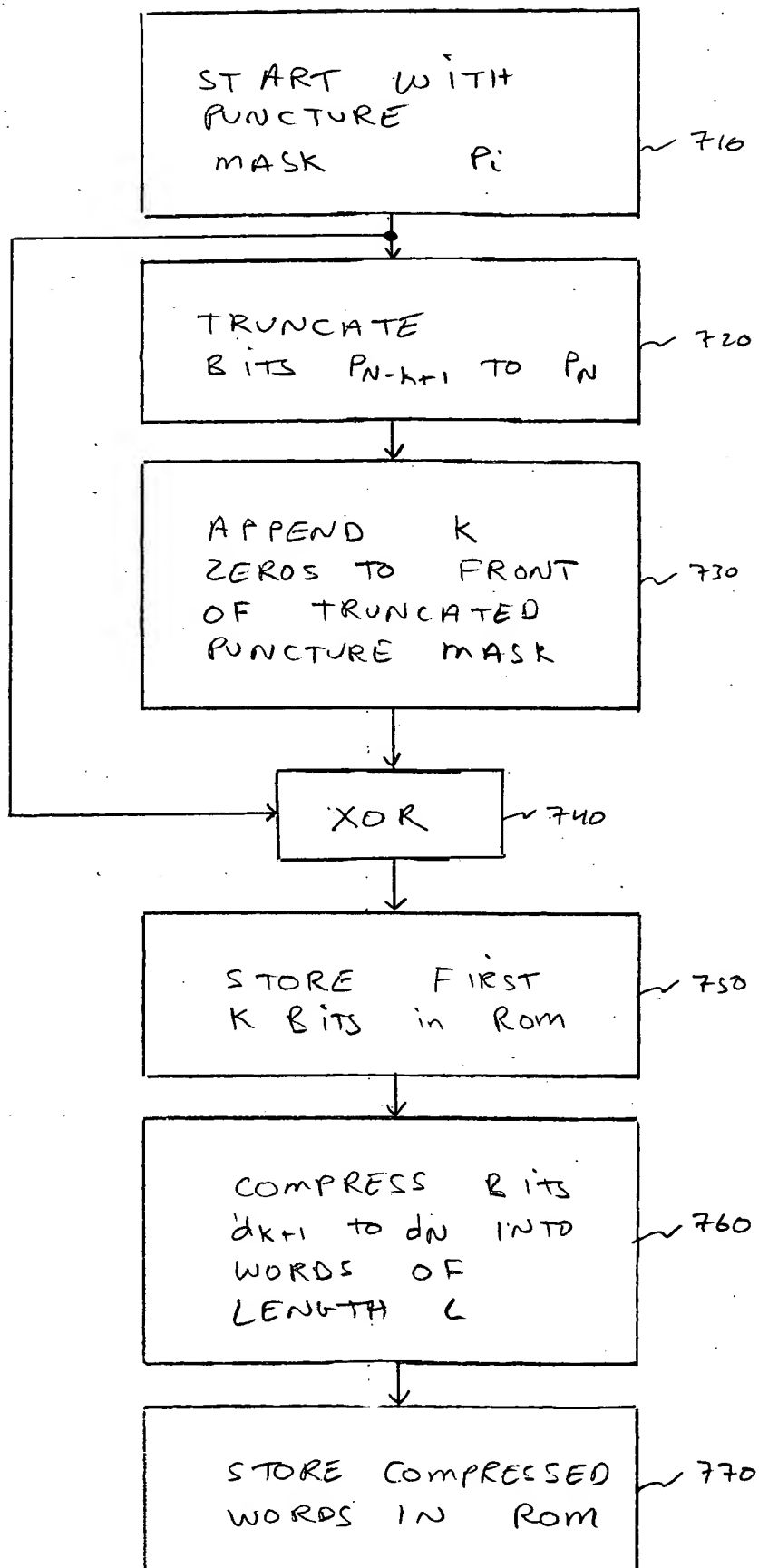


Fig. 8

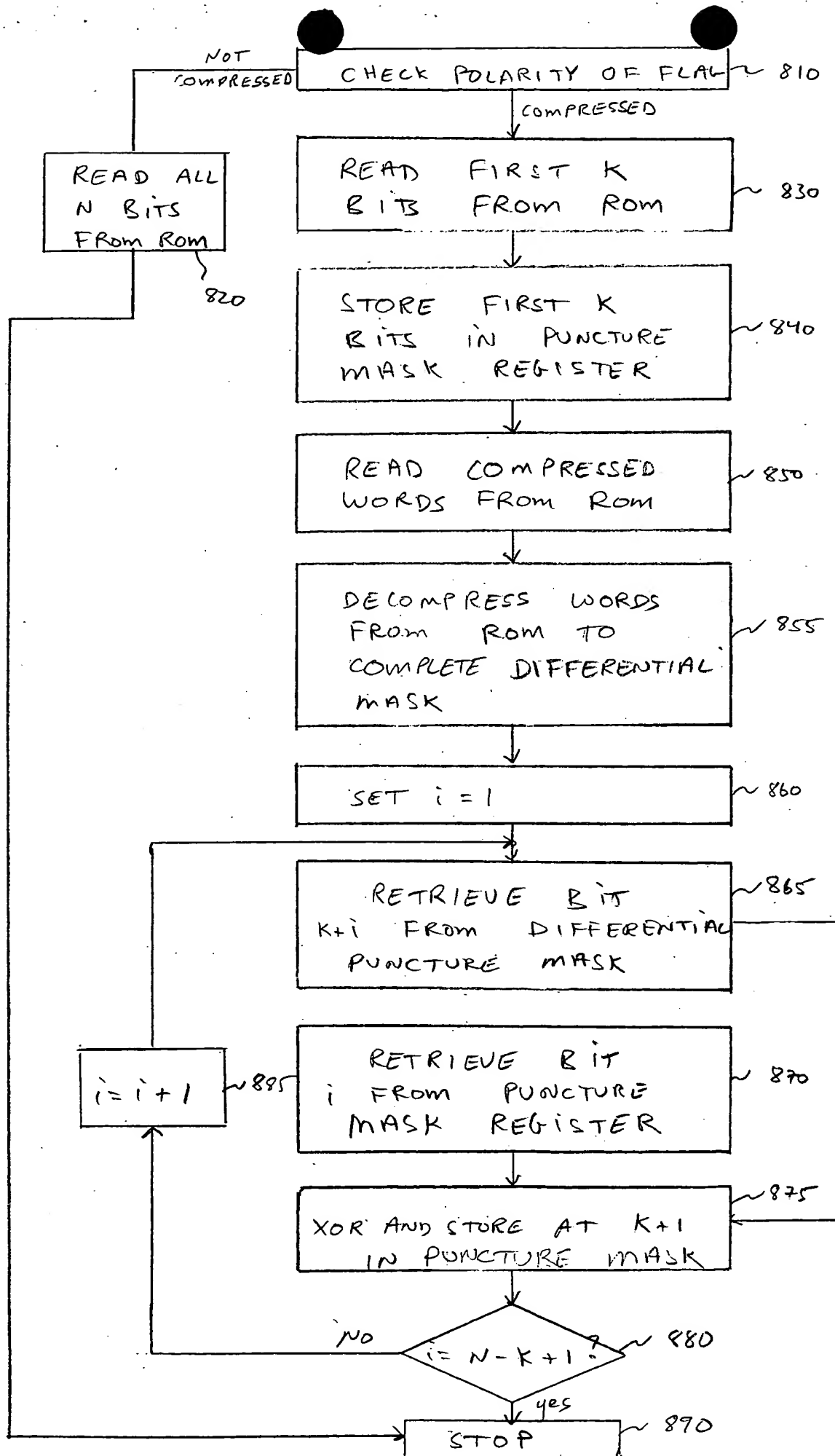


Fig. 9

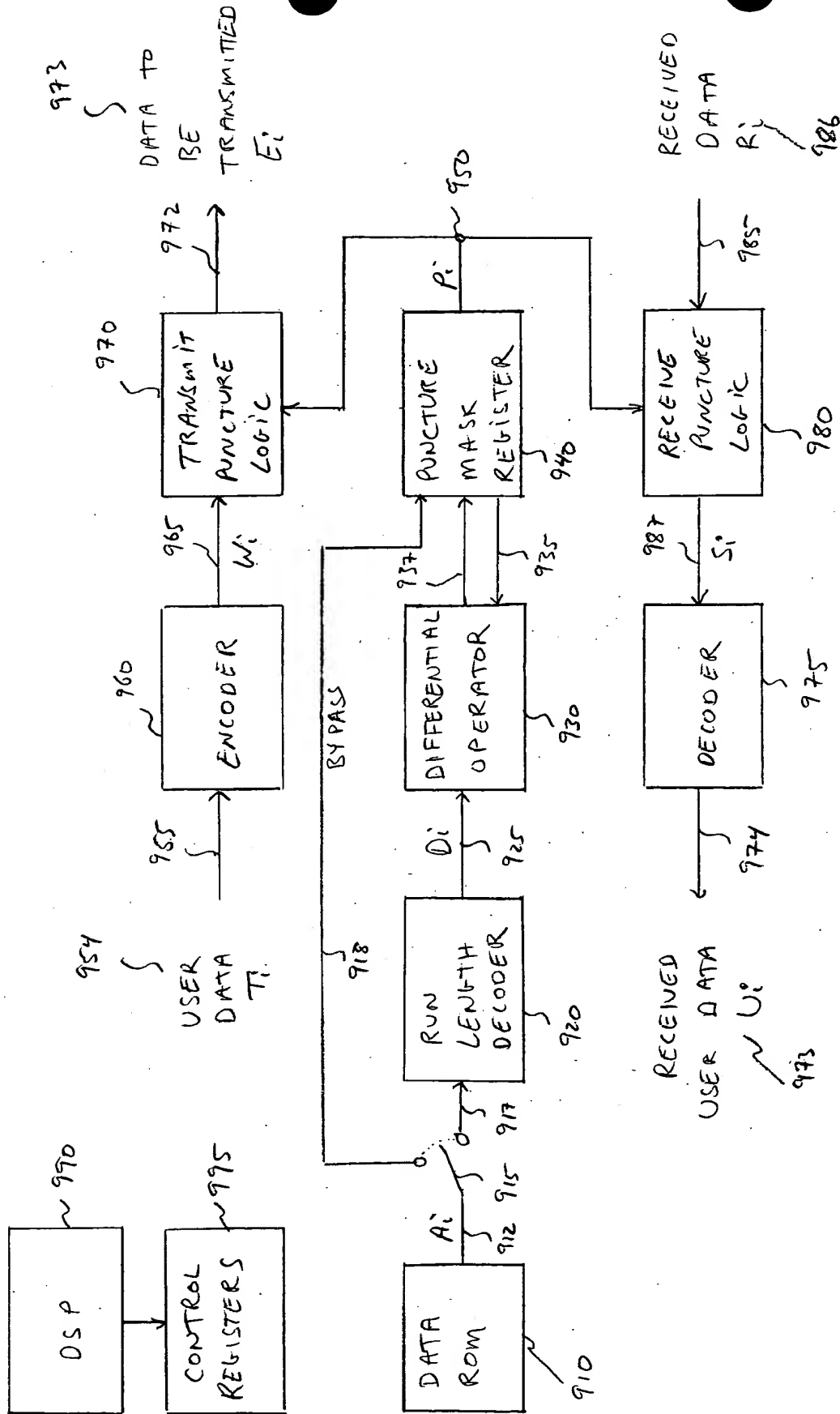


Fig. 10

EGPRS, GPRS, and GSM Data Mode Puncture ROM Requirements

Mode ID	Mask length N (bits)	Mask length (words)	Mask Period K (bits)	Code Length L (bits)	No. code words M	ROM req K +LM (bits)	ROM Req. (words)	Compress. ratio
TCH/F14.4	588	37	18	10	2	38	3	12.33
CS-2*	588	37	48	10	1	58	4	9.25
CS-2	588	37	4	6	25	154	10	3.70
CS-3	676	43	6	10	1	16	1	43.00
MCS-1 P1*	588	37	63	9	3	90	6	6.17
MCS-1 P2*	588	37	63	9	3	90	6	6.17
MCS-1 P1	588	37	21	6	17	123	8	4.63
MCS-1 P2	588	37	21	6	17	123	8	4.63
MCS-2 P1	732	46	6	7	13	97	7	6.57
MCS-2 P2	732	46	6	7	13	97	7	6.57
MCS-3 P1	948	60	18	8	7	94	6	10.00
MCS-3 P2	948	60	18	9	7	81	6	10.00
MCS-3 P3	948	60	18	9	9	99	7	8.57
MCS-4 P1	1116	70	3	11	1	14	1	70.00
MCS-4 P2	1116	70	3	11	1	14	1	70.00
MCS-4 P3	1116	70	3	11	1	14	1	70.00
MCS-5 P1	1404	88	9	9	12	117	8	11.00
MCS-5 P2	1404	88	9	9	12	117	8	11.00
MCS-6 P1*	1836	115	66	9	9	147	10	11.50
MCS-6 P2*	1836	115	66	9	9	147	10	11.50
MCS-6 P1	1836	115	3	7	49	346	22	5.23
MCS-6 P2	1836	115	3	7	49	346	22	5.23
MCS-7 P1	1404	88	18	8	15	138	9	9.78
MCS-7 P2	1404	88	18	8	15	138	9	9.78
MCS-7 P3	1404	88	18	8	15	138	9	9.78
MCS-8 P1	1692	106	36	10	3	66	5	21.20
MCS-8 P2	1692	106	36	11	3	69	5	21.20
MCS-8 P3	1692	106	36	11	3	69	5	21.20
MCS-9 P1	1836	115	3	11	1	14	1	115.00
MCS-9 P2	1836	115	3	11	1	14	1	115.00
MCS-9 P3	1836	115	3	11	1	14	1	115.00
Total*	31960	2006				1890	137	14.64
Total	31960	2006				2550	161	12.46

*Denotes the case where multiples of the basic puncture matrix are used as the basic period K.

TABLE 1.